DAKOTA ACCESS PIPELINE PROJECT
IOWA WINTER CONSTRUCTION PLAN

November 2016

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1.0 INTRODUCTION

Dakota Access, LLC (Dakota Access) has developed this Iowa Winter Construction Plan (Plan) to outline the measures for construction of the Dakota Access Pipeline (DAPL) Project during winter weather conditions. Winter weather conditions are defined as severe or harsh winter weather events with a real or perceived potential to impact the construction activities associated with the DAPL Project. The purpose of this Plan is to outline the procedures for forecasting, planning for, and mitigating the effects that may result from extreme low temperatures and/or considerable snow/ice precipitation events.

2.0 WEATHER FORECASTING/MODELING

Winter weather changes and conditions are fairly well documented for Iowa, and DAPL has considered normal winter conditions in their baseline construction and mitigation measures. Adverse winter weather conditions are more difficult to predict with any great certainty well in advance of a specific event. However, there is often reliable forecast data available seven to 14 days in advance of most events. DAPL, and their designated contractors, will be monitoring winter weather conditions and local/regional forecasts throughout the construction period. This information will be used to anticipate upcoming adverse winter conditions and implement the mitigation measures outlined herein.

The following sites will be the primary forecasting sources utilized by DAPL and their contractors:

1. National Weather Service, Des Moines, IA Office- http://www.weather.gov/dmx/
2. National Weather Service, Internet Weather Source- http://weather.noaa.gov/weather/IA_cc_us.html
3. The Weather Channel- http://weather.com/
4. KCCI Weather- http:// http://www.kcci.com/weather

3.0 WINTER CONSTRUCTION

Adverse winter weather conditions such as sub-freezing temperatures and excessive snow or ice could affect construction activities by creating potentially unsafe working conditions and/or requiring slower or modified approaches to otherwise routine construction tasks. With the proper precautions pipeline construction can typically take place during most adverse weather conditions. To maintain safe working conditions and meet environmental objectives and regulatory requirements, the construction mitigation techniques discussed in this section would be implemented as applicable during adverse winter weather conditions. These measures would be implemented in addition to the existing best management practices (BMPs).

3.1 Snow and Cold Weather Management

- Snow, when present, may be stored over the trench line prior to excavation to prevent deep frost penetration in areas requiring excavation. Remove this snow to the edge of the right-of-way prior to topsoil removal and trenching activities.
- Snow not packed or used to prevent deep frost should be plowed/pushed to the edge of the right-of-way to allow for sufficient workspace.
- Gaps in the windrowed snow should be left at obvious drainage crossings.
- Snow may be removed from the travel lane prior to grading to improve driving conditions.
- Consider requesting additional temporary workspace (ATWS), as needed on the working side to store snow without hindering or restricting typical construction configurations.
- Soils and snow should not be mixed when clearing access roads and/or right-of-way.
- Limit snow removal from the trenchline and spoil side until trenching activities begin.
- Place subsoil on a layer of straw or mulch to minimize soil mixing in the event the spoil pile freezes and is left over winter.
- Remove excess snow and ice that could interfere with trench backfilling operations.

3.2 Soil Handling and Trenching

- Minimize the amount of open trench.
- Limit frozen topsoil stripping activities to equipment capable of accurately stripping variable depths of topsoil.
- Include breaks at a minimum at drainage crossings in the topsoil or spoil piles left over-winter to allow runoff and snowmelt to be diverted. Additional breaks may be warranted depending on the volume of snow accumulated or anticipated (and thus the amount of run off possible).
- Suspend final clean-up activities and topsoil placement if stockpiled topsoil is frozen and cannot be uniformly redistributed across the right-of-way.
- Apply normal temporary right-of-way stabilization procedures as ground conditions permit.
- Where final clean up and restoration has not been completed, leave the right-of-way in a significantly roughened condition to reduce potential for erosion during snowmelt.

3.3 Temporary and Permanent Erosion Control Methods

- When soils are frozen, utilize erosion control measures such as trench interceptor excavated across slope, mulching, silt fence, straw bales, or sandbags in lieu of slope breakers.
- Install silt fence in frozen soils with "ditch witch" trencher, placing silt fence and wooden stakes (hammered below frost line) in the narrow trench, then backfill and tamp with the cuttings.
- Anchor hay bales with rebar instead of wooden stakes as needed.
- Install erosion control devices (ECDs) at locations indicated in the erosion control procedures within Section 3.1 of the Stormwater Pollution Prevention Plan (SWPPP) filed with the Iowa Utilities Board. Consider winter/spring rains and snowmelt when sizing, locating, and installing and ECDs.
- Stabilize unreclaimed soil surfaces and remaining soil stockpiles left over winter or for more than 7-21 days (depending on slope).
- If risk of flooding during snowmelt is a perceived threat, remove temporary bridges and mats before the contractor leaves the right-of-way for the winter. Store temporary bridges on the right-of-way in a secure upland area near the crossing for spring re-installation.
- Install equipment crossings remaining in place for spring/summer cleanup to handle maximum predicted spring runoff flows.

3.4 Lowering in and Backfill

- Clear the pipeline trench of snow and ice prior to lowering in, but limit the mixing of snow and ice with spoil material.
- Backfill trench with unfrozen soil as practical. The first several inches of frozen subsoil may have to be removed from the soil stockpiles to expose unfrozen soil.
- If subsoil on the spoil side is substantially frozen, backfill the trench with frozen subsoil, broken up as practical. Repair settled areas the following spring using the remaining subsoil (previously protected with mulch or functional equivalent) that remains, then replace topsoil.
- Backfilling activities should immediately follow lowering-in activities, to prevent the infill of snow and reduce excessive freezing of spoil piles. Regrade right-of-way immediately following backfilling.
- The final clean-up schedule will vary, depending on ground conditions and time of construction. The Environmental Inspector (EI) in coordination with the Chief Inspector and Construction Manager should determine if spring thaw reclamation activities are required.

3.5 Hydrostatic Testing/Dewatering

- Carefully consider the locations where hydrostatic test water and trench water are discharged.
- Depending upon the temperature, filter bags may be subject to freeze and straw bale dewatering structures may need to be replaced daily due to freezing.
- Discharges of hydrostatic test water to frozen or snow covered ground where infiltration cannot be achieved is prohibited.

3.6 Post-Construction Monitoring

- Identify ECDs requiring repair, areas of slope instability, and areas where significant levels of erosion are occurring.
- The extent of inspections will be based on precipitation events, runoff amounts, and thawing. When snow melts or the ground thaws, the potential for erosion increases and the frequency of inspections would increase.
- Land restoration activities and corrective actions may be deferred until spring where no sensitive resources are impacted, where access is not feasible, or where damage from accessing the site would outweigh the benefits of correcting the issue during the winter.

3.7 Thawing Conditions

- In areas where topsoil and subsoil mixing is not a concern standard operations will be continued and monitored. In these areas additional reclamation practices (i.e. deep ripping passes) may be required.
- Attempt to work in non-problem areas, such as well drained, dry sites or in shaded and frozen areas until conditions improve.
- Install timber construction mats in problem areas until conditions improve.
- Plan construction activities during periods when ground conditions are appropriate (e.g., avoid heavily saturated areas due to winter precipitation, thawing, or soils that are otherwise heavily saturated due to winter conditions).
- Suspend construction activities in unsuitable areas (including on heavily saturated areas due to winter precipitation, thawing, or soil that is otherwise heavily saturated due to winter conditions) until appropriate conditions are established or alternatives identified.

4.0 DURATION

The measures outlined in the Iowa Winter Construction Plan should be implemented so long as adverse winter weather conditions persist during construction. After springtime thawing has occurred and construction could be accomplished using standard BMPs outlined in the SWPPP and Agricultural Impact Mitigation Plan, the additional measures outlined herein are no longer required. Weather forecast resources outlined in Section 2.0 of this Plan should be referenced to aid the determination of when the risk of adverse winter weather conditions has subsided.

5.0 RECORDKEEPING

Dakota Access shall maintain a list of all parcels in Iowa on which winter construction activities referred to herein take place (including suspension of construction activities). In the event that winter construction activities referred to herein take place in a county, the weekly construction progress report filed by Dakota Access with the Board shall identify the number of affected parcels in each county.